

**INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
Public Review Draft**

Decker Island Phase II Habitat Development and Levee
Rehabilitation Project



Prepared for:

MBK Engineers
2450 Alhambra Blvd., 2nd Floor
Sacramento, CA 95817

Prepared by:

Stillwater Environmental Services
279 Cousteau Place, Suite 400
Davis, CA 95616

July 2003

Table of Contents

| | | |
|----------|---|-----------|
| 1 | INTRODUCTION | 3 |
| 1.1 | PROJECT SUMMARY | 3 |
| 1.2 | PROJECT OBJECTIVES..... | 4 |
| 1.3 | BACKGROUND..... | 5 |
| 1.3.1 | <i>Project Phases</i> | 5 |
| 1.3.2 | <i>Assembly Bill 360 Requirements</i> | 5 |
| 1.4 | PROJECT DESCRIPTION..... | 6 |
| 1.4.1 | <i>Decker Island Habitat Development, Phase II</i> | 6 |
| 1.4.2 | <i>Levee Reinforcement</i> | 9 |
| 1.4.3 | <i>Permitting and agency consultation</i> | 12 |
| 2 | ENVIRONMENTAL IMPACTS..... | 13 |
| 2.1 | BACKGROUND..... | 13 |
| 2.2 | ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED..... | 14 |
| 2.3 | SUMMARY OF MITIGATION FOR ENVIRONMENTAL IMPACTS..... | 14 |
| 2.3.1 | <i>Impacts/Mitigation on Jersey Island</i> | 15 |
| 2.3.2 | <i>Impacts/Mitigation on Van Sickle Island</i> | 15 |
| 2.4 | INITIAL STUDY CHECKLIST | 17 |
| 2.4.1 | <i>Aesthetics</i> | 17 |
| 2.4.2 | <i>Agricultural Resources</i> | 18 |
| 2.4.3 | <i>Air Quality</i> | 19 |
| 2.4.4 | <i>Biological Resources</i> | 19 |
| 2.4.5 | <i>Cultural Resources</i> | 29 |
| 2.4.6 | <i>Geology and Soils</i> | 29 |
| 2.4.7 | <i>Hazards and Hazardous Materials</i> | 31 |
| 2.4.8 | <i>Hydrology and Water Quality</i> | 32 |
| 2.4.9 | <i>Land Use and Planning</i> | 33 |
| 2.4.10 | <i>Mineral Resources</i> | 34 |
| 2.4.11 | <i>Noise</i> | 34 |
| 2.4.12 | <i>Population and Housing</i> | 35 |
| 2.4.13 | <i>Public Services</i> | 36 |
| 2.4.14 | <i>Transportation and Traffic</i> | 37 |
| 2.4.15 | <i>Recreation</i> | 38 |
| 2.4.16 | <i>Utilities and Service Systems</i> | 38 |
| 2.4.17 | <i>Mandatory Findings of Significance</i> | 39 |
| 2.5 | DETERMINATION..... | 41 |
| 3 | LIST OF PREPARERS..... | 42 |
| 4 | CONSULTATION AND COORDINATION | 43 |
| 4.1 | AGENCY PERSONNEL CONSULTED | 43 |
| 4.2 | PUBLIC INVOLVEMENT..... | 43 |
| 5 | COMPLIANCE WITH FEDERAL LAWS AND REGULATIONS | 45 |
| 5.1 | FEDERAL..... | 45 |
| 5.2 | STATE | 45 |
| 6 | REFERENCES..... | 46 |

List of Tables

| | |
|---|----|
| Table 1. Summary of potential issues and target acreages by island for potential impact/restoration. | 14 |
| Table 2. Results of AB360 habitat assessments and associated mitigation will be negotiated with CDFG and project proponent for areas to receive dredge spoils from Decker Island Phase II project. | 15 |

List of Figures

- Figure 1. Project vicinity map within Sacramento-San Joaquin Delta.
- Figure 2. Decker Island Habitat Development Project area.
- Figure 3. Jersey Island site map and levee reinforcement sites.
- Figure 4. Bradford Island site map and levee reinforcement sites.
- Figure 5. Van Sickle Island site map, levee reinforcement sites, and potential on-site mitigation sites.

List of Appendices

- Appendix A: Bradford, Jersey, and Van Sickle Island AB360 Habitat Assessments (includes maps and levee logs).
- Appendix B: Species observed during site visits to Decker Island, Bradford Island, Jersey Island, and Van Sickle Island.
- Appendix C: Decker Island preliminary design plans and typical cross-sections for levee rehabilitation on Bradford, Jersey, and Van Sickle islands.
- Appendix D: Special-status species list for Bradford and Jersey Islands (CNDDDB results).
- Appendix E: Special-status species list for Van Sickle Island (CNDDDB results).
- Appendix F: Photo log – Project sites on Bradford, Jersey, Van Sickle, and Decker islands.

1 INTRODUCTION

Phase II of the Decker Island Habitat Development/Levee Rehabilitation Project offers a unique opportunity to restore tidal wetland habitat historically abundant in the Sacramento-San Joaquin Delta, while at the same time providing material necessary for levee reinforcement on neighboring Bradford, Jersey, and Van Sickle islands. To assess the environmental impacts of the Project, the Department of Water Resources (DWR) completed habitat assessments, including and addressing threatened, endangered, and sensitive (TES) plant and wildlife species, archaeological studies, and a thorough analysis of environmental impacts based on the Project design and construction activities. This report summarizes this analysis, pursuant to the California Environmental Quality Act (CEQA).

1.1 Project Summary

The Decker Island Habitat Enhancement Project provides a unique opportunity to couple levee reinforcement achieved through DWR's Delta Levees Program (AB 360) with habitat improvement. This Phase II project involves two components: (1) the removal and reuse of dredge material from a California Department of Fish and Game (CDFG)-owned parcel on Decker Island for levee reinforcement on Bradford, Jersey, and Van Sickle islands, and (2) the continued restoration of habitat on the excavated parcel through topographic contouring to create suitable conditions for wetland and riparian habitat development (Figure 1). Approximately 270,000 cubic yards of material will be excavated from Decker Island to provide 125,000 cubic yards to Jersey Island, 100,000 cubic yards to Bradford Island, and 45,000 cubic yards to Van Sickle Island for levee reinforcement. Approximately 10.6 acres of additional habitat will be created on the Decker Island parcel to augment habitat created during Phase I of the project. Phase I of the Project included habitat development on 14 acres of Decker Island (on the same CDFG parcel) and use of the dredged material to reinforce levees on Twitchell Island and Webb Tract.

Both Phase I and Phase II of the Decker Island Habitat Development project are consistent with CALFED Bay-Delta programmatic goals. The Project provides long-term protection for multiple Delta resources by maintaining and improving the integrity of the extensive Delta levees system, as well as improving aquatic and terrestrial habitats and natural processes to support stable, self-sustaining populations of diverse and valuable plant and animal species through an adaptive management process.

The multi-phased Project supports the CALFED Science Program goal of articulating, testing, refining, and growing understandings about human and natural systems relevant to CALFED issues by filling monitoring gaps and fostering adaptive management. In accordance with Science Program goals, Phases I and II of the Project will or have included:

1. identification of project performance measures (e.g., percent survival of plantings);
2. monitoring of selected variables (e.g., habitat value, turbidity, and fish species) before and after project actions;
3. assessment of monitoring results;
4. refining of progressive phases of the Project based upon monitoring results (see Section 1.4.1.3 for more detail); and
5. advancing knowledge on various critical Delta science questions – including control of exotic species, creation of dendritic tidal channels, geomorphology and sediment transport, mercury methylation, and carbon production – by collaborating with research, academic institutions, and other agencies.

The habitat development on Decker Island supports CALFED Ecosystem Restoration Program goals of rehabilitating natural processes related to hydrology and stream channels; maintaining and enhancing fish populations critical to commercial, sport and recreational fisheries; restoring functional habitats to allow

species to thrive; and reducing the negative impacts of invasive species that compete with and destroy native species.

The levee strengthening on Van Sickle, Jersey, and Bradford Islands supports the CALFED Levee System Integrity Program objective of protecting environmental and agricultural uses by reducing the threat of levee failure. Levee strengthening also supports the program's goals of improving levees to a higher standard for greater flood protection and ensuring levee maintenance and habitat needs are met.

1.2 Project Objectives

The Project will restore tidal system function to a dredge material disposal site and thereby create a diversity of aquatic, wetland, riparian, and upland habitats within the Sacramento-San Joaquin Delta where none exists today. Project construction will also minimize and mitigate potential impacts to threatened, endangered, or sensitive (TES) species and minimize water quality impacts. Ultimately, the restored site will provide more potential habitat for these species. More specifically, the Project objectives are as follows:

- **Restore a functioning ecosystem and self-sustaining habitats in the Delta.** The project objectives include increasing aquatic habitat, including in-river, benthic, and riparian habitats, to support numerous fish and wildlife species. The Project will create a mosaic of different habitats with varying vegetation canopy layers, vegetation type edges, and water/land interfaces. These varying habitats will provide feeding, nesting, breeding, roosting, perching, burrowing, and cover habitat for resident and migratory species along the lower Sacramento River. Additionally, the Project will test the hypothesis that the Project configuration and features will aid in the recovery of listed fish species found within the Delta, including Delta smelt, Chinook salmon, splittail, tule perch, by providing newly created spawning habitat similar to those historically known to occur. A monitoring program to evaluate the success of providing habitat for native fish populations will be developed, and will be used to adaptively manage future actions on Decker Island. The success of these project features will be evaluated with monitoring.
- **Restore and strengthen existing Delta levees.** Material removed from Decker Island will be used for levee maintenance on Bradford, Jersey, and Van Sickle islands. The levees surrounding Bradford, Jersey, and Van Sickle islands protect 8,000 acres of Delta land used by many species of birds, fish, and wildlife. The levees also help to maintain water quality within the Sacramento-San Joaquin Delta. The protected lands also provide valuable grazing and agricultural areas on Bradford and Jersey islands, and recreational opportunities on Van Sickle Island.
- **Minimize water quality impacts to the Delta.** Efforts to minimize increases in turbidity will be made during the project so as not to impact fish and wildlife in the vicinity of the Project area.

By restoring a portion of Decker Island that has little agricultural or developmental value, this project produces a net increase in available fish and wildlife habitat. In addition, by rehabilitating existing levees on Jersey, Bradford, and Van Sickle islands, the loss of property, upland habitat, and potential impacts to Delta water quality from inundation resulting from levee failures is avoided. Indirect impacts of project implementation, including temporary increases in turbidity and potential impacts to foraging habitat during the construction phase will be short-lived and less than significant. Direct impacts due to levee reinforcement on generalized AB360 habitat types (shaded riverine aquatic habitat, freshwater marsh, shrub scrub, and riparian forest) will be mitigated on site through coordination and consultation with the CDFG. Impacts to jurisdictional wetlands and TES species and/or habitat due to levee reinforcement will

be minimized, mitigated on site, and permitted as required by Clean Water Act Section 404, Endangered Species Act Section 7 Consultation.

1.3 Background

The proposed project is part of a multi-phased approach of several diverse habitat development projects designed to meet DWR's Delta Flood Protection Program (SB34/AB360) requirement for net aquatic habitat improvement. Additionally, the Project's benefits are consistent with the aquatic and wetland habitat goals and objectives of the CALFED Ecosystem Restoration Program; the adaptive management focus of the CALFED Science Program; the land use and flood protection goals of the CALFED Levee Integrity Program; and the fisheries recovery strategies described in the November 1996 Recovery Plan for the Sacramento-San Joaquin Delta Native Fishes. The Project's benefits are consistent with the objectives of CALFED, CVPIA, Regional Water Quality Control Board, as well as the state and federal Endangered Species Acts. The project will provide a net increase in both terrestrial riparian and in-channel, nearshore habitat within the Delta, providing foraging, nesting, and roosting opportunities for many listed and non-listed species.

1.3.1 Project Phases

Phase I of the Decker Island Habitat Development Project developed habitat on 14 acres of Decker Island and provided dredged material to reinforce levees on Twitchell Island and Webb Tract. Phase I was completed in October 2001 when the levee breach to Horseshoe Bend was completed. Ongoing habitat maintenance and monitoring will continue through 2003. Preliminary fisheries sampling over the last four months shows both native and non-native fish species using the newly created channels, though the abundance of non-native fish species is higher than that of native species. Fish monitoring for this project will continue for four additional years to develop a clearer understanding of fish utilization within the newly created channels.

Phase II will expand the Phase I habitat areas created on Decker Island to include 10.6 additional CDFG-owned acres on the northern tip of Decker Island (Figure 2a and Appendix C). This area is ideal for habitat development because: (a) CDFG owns the 32.5-acre parcel where the restoration would occur; (b) the existing island environment is predominantly weedy, upland vegetation with low habitat value; and (c) in addition to creating quality habitat where very little habitat is available, the material excavated from Decker Island would be used to protect against future levee failures in the Delta by strengthening and reinforcing existing levees on Jersey, Bradford, and Van Sickle islands.

Building from the results of Phases I and II, a third phase of the project may expand the habitat created on Decker Island and provide additional material for levee rehabilitation. DWR is currently appraising 473.7 acres south of the Phase II project area for potential acquisition and additional restoration.

The Decker Island Habitat Development Project is being adaptively managed to refine and improve progressive phases based on the monitoring results of previous phases. For example, ongoing vegetation survival monitoring has resulted in grading and revegetation improvements in Phase II (see Section 1.4.1.3). Likewise, continued monitoring of Phases I and II will determine the planning and design of Phase III.

1.3.2 Assembly Bill 360 Requirements

CDFG's Delta Levee Habitat Improvement Program is responsible for assessing habitat impacts to certain general habitat types resulting from levee maintenance and improvements in the Delta under the Delta Flood Protection Act (SB 34, superseded by Assembly Bill 360), and for ensuring that there is "net long-term habitat improvement." As part of these AB360 requirements, habitat assessments have been

completed on Jersey, Bradford, and Van Sickle islands by CDFG. AB360 habitat assessments consist of mapping freshwater marsh, scrub shrub, riparian forest, and shaded riverine aquatic habitat/vegetation types within the levee project footprint. Typically, this extends out to 30 ft from the toe of the levee or from the toe drain, whichever is greater (CDFG 2002). The length of each of the four habitat types is measured, and the width of freshwater marsh, scrub shrub, and riparian forest habitat is estimated and recorded on “levee logs.” Appendix A contains CDFG’s AB360 Habitat Assessment reports for Bradford and Van Sickle islands, as well as levee logs and GIS maps for Jersey Island. The total acreage of each AB360 habitat type impacted by the project was calculated based on these habitat assessments, and appropriate mitigation has been informally agreed upon between CDFG and DWR for Jersey Island, Bradford Island, and the portion of Van Sickle Island to receive material from the Decker Phase II Project (Site 2). This is in compliance with the AB360 requirements of “no net loss” and “net long-term habitat improvement.” These impacts and mitigation are summarized in Section 2.3, Table 2, and are discussed in more detail in Section 2.4.4.1 (Habitat Impacts/AB360).

Assessment and mitigation for project impacts to AB360 habitat types, in combination with more specific mitigation for wetlands under Clean Water Act Section 404 requirements, and habitat consideration for threatened, endangered, or sensitive (TES) species under the Endangered Species Act or related regulations (summarized in Section 2.3 and discussed in more detail in Section 2.4.4), address most of the issues associated with project-related habitat impacts or modifications.

1.4 Project Description

As described in Section 1.1 above, the Decker Island Habitat Development and Levee Stabilization Project is the second phase in restoring fish and wildlife habitats on Decker Island, while simultaneously providing fill material to reinforce Delta levees and reduce the risk of levee failure. All four islands related to the Project are located within the Sacramento-San Joaquin Delta (Figure 1). The area of habitat development on Decker Island is shown in Figures 2a and 2b. Levees to be reinforced with material from Decker are shown in Figures 3–5. Project impacts will extend landward up to 100 ft from the toe of the levees on Bradford and Jersey Islands, and up to 60 ft from the levee toe on Van Sickle Island.

Biological and cultural resources surveys were conducted on Decker Island as part of the Phase I project (DWR 1998). Reconnaissance-level biological surveys were conducted by Stillwater Sciences staff on Jersey and Bradford islands on May 2, 2003, and on Van Sickle Island on June 11, 2003. A cultural resources survey was conducted on Bradford Island on 11 June 2003, on Jersey Island on 17 June 2003, and will be conducted on Van Sickle Island in early July. Specific attributes of each of the islands and the existing conditions of the project sites are discussed below and summarized in Table 1.

1.4.1 Decker Island Habitat Development, Phase II

Decker Island is located along the Sacramento River, at approximately River Mile (RM) 8.0 (Figure 1). The island is approximately 648 acres, 34.5 of which are owned by CDFG. Other landowners on the island include the Port of Sacramento and Mega-Sand. The surface of Decker Island is flat and at an elevation of approximately 20 ft above sea level. This high elevation, compared to other Delta islands, is due to the dredge spoils that were deposited on the Island when the Sacramento River was dredged between 1917 and 1937 to create the Sacramento deep-water ship channel. The resulting mound of dredge material that makes up Decker Island was subsequently colonized and dominated primarily by non-native upland plant species, including star thistle (*Centaurea solstitialis*) and exotic grasses (*Bromus diandrus*, *Cynodon dactylon*).

The project site will expand on Phase I habitat development within the 34.5 acre CDFG property on the northern tip of the island. Existing Phase II habitat conditions continue to support mostly ruderal, non-

native herbaceous upland vegetation species (DWR 1998). A few tree species, including black locust (*Robinia pseudoacacia*) and a single Valley oak (*Quercus lobata*), are present. The banks of the island are steep and contain patches of giant reed (*Arundo donax*), and thickets of shrubs such as willow (*Salix* spp.), Himalayan blackberry (*Rubus discolor*), California wild rose (*Rosa californica*), and elderberry (*Sambucus mexicana*). Vegetation on the lower intertidal sand or mudflats includes bulrush (*Scirpus* spp.), nutsedge (*Cyperus eragrostis*), and rush (*Juncus* spp.). Several patches of Mason's lilaeopsis (*Lilaeopsis masonii*), a Federal species of concern and California "rare" plant, are found at the northern tip of the island (DWR 1998). Special status species will not be impacted by the project because they will be avoided during construction, and many will ultimately benefit from the habitat enhancement efforts. A complete list of plant species observed on Decker Island during a site visit by DWR staff is included in Appendix B.

Wildlife observed on Decker Island were primarily avian species, including northern harrier, red-tailed hawk, Western meadowlark, gull, pigeon, California quail, and yellow-rumped warbler (DWR 1998). Several rodent burrows were noted in the grassland during Phase I studies (DWR 1998).

Excavation on Decker Island will use similar methodologies as implemented during Phase I, and would connect to channels created under Phase I to provide a larger tidal wetland complex (Appendix C). Material will be excavated and transported to receiving islands via in-channel barge. Decker Island will then be re-graded to create channels and sloped areas, as well as re-vegetated with native vegetation. More specifics on habitat development for Phase II are described in detail below. A letter of permission will be obtained from the USACE prior to project implementation, as required under Section 404 of the Clean Water Act.

1.4.1.1 Excavation and Transport

Channel excavation efforts will begin at one corner of Decker Island and proceed towards the existing distributory channels of the Phase I Project and Horseshoe Bend. Excavation efforts will be performed with conventional earth-moving equipment. The excavation and contouring will be conducted in the "dry" to minimize environmental impacts associated with aquatic habitats and species. The only excavation to be performed in connection with a wet channel will be the removal of the coffer dam/soil plug between the Phase I and II projects.

A channel plug will be maintained between Phase I and II to prevent tidal water from entering the Phase II construction area. Upon completion of all excavation, the plug will be removed with standard construction equipment. To minimize impact to the existing waterways found in Phase II area, erosion control best management practices (BMPs) will be used, such as (1) conducting all excavations in the "dry" (i.e., the Phase II channel will not be connected to the Phase I channel until all excavation, grading and revegetation is complete) to eliminate the risk of soil erosion due to tidal or wave action, and (2) placement of straw bails on upland slopes to minimize soil erosion.

Transportation of excavated material from Decker Island to Bradford, Jersey, and Van Sickle islands will be conducted by barge. The excavated material will be hauled to a feed hopper on Decker Island, placed on a conveyor and transported to the barge. The barge will be moored near the island. Diesel generators on Decker Island and/or a barge will supply power for the conveyor and other electrical systems. A fuel storage containment area will be established for the fuel storage tanks.

1.4.1.2 Vegetation and Grading

Grading of Decker Island is designed to create a variety of hydrologic conditions that will support intertidal wetlands, mixed riparian forest, and meandering intertidal channels with varying depths.

Preliminary design plans are presented in Appendix C. The site will be contoured after preliminary excavation and grading. Contouring will create slough-like features that will connect to the existing Phase I channels. The project area will be constructed to an approximate elevation range of -4.0 to 7.0 ft and is intended to support the target habitat types discussed below. Channel depths will vary from 2.5 feet to 6 feet at mean high water level, to ensure that water is present during low tide. These elevations were determined based on results of completed habitat development projects in the Delta, consultation with CDFG, USFWS, and NMFS, and vegetation monitoring results from Phase I of the Decker Island Habitat Development Project.

Wetland habitat development under Phase I began on 14 acres of the CDFG property, and the proposed second phase of the project would add 10.6 acres of open water, emergent wetland, and riparian habitat (Figure 2b and Appendix C). Completed site elevations will vary between -4.0 to 7.0 ft, consisting of the following habitat types:

- Open shallow water (elevation -4.0 to -1.0 ft) = 2.31 acres,
- Zone 1: California bulrush (elevation -1.0 to 2.0 ft) = 0.55 acres
- Zone 2: tules, rush, bulrush (elevation 2.0 to 3.0 ft) = 4.31 acres
- Zone 3: alders, willows, dogwoods, buttonbush (elevation 3.0 to 7.0 ft) = 3.45 acres

These numbers will be adjusted as needed to maximize the amount of native fish and wildlife use.

Revegetation of excavated and contoured areas will occur immediately following grading in order to minimize the threat of invasion by non-native plant species and to promote erosion control. Upland riparian plant species will generally be planted at elevations between 3 and 7 ft. Upland plantings will be temporarily irrigated with sprinklers and/or hand watering until the desired survival rate is achieved and/or plants appear to be well-established. Wetland plant species will be planted at elevations ranging from -1.0 to 3.0 ft. As a result of Phase I vegetation survival monitoring, in which a high rate of natural recruitment of wetland and tidal plant species was observed, these species will be planted at lower densities during Phase II. In addition, the species of revegetated wetland plants will be slightly different from Phase I based on survival monitoring data.

The newly created upland, wetland, and tidal plant communities established by Phase I and II revegetation efforts will increase fish, avian, and wildlife habitat along the Sacramento River. Delta fisheries experts have been consulted to maximize potential habitat for Delta smelt, Chinook salmon, splittail, and tule perch. The Project will create a mosaic of different habitats with varying vegetation canopy layers, vegetation type edges, and water/land interfaces. These varying habitats will provide feeding, nesting, breeding, roosting, perching, burrowing, and hiding cover for resident and migratory bird species. The target habitats are designed to support numerous TES species found within the Delta, including Delta smelt, Chinook salmon, splittail, tule perch, Mason's lilaeopsis, Delta mudwort, lowthroat, and Valley elderberry longhorn beetle.

1.4.1.3 Adaptive Management and Monitoring

The multi-phased Decker Island Habitat Development Project is designed to refine and improve progressive phases of the Project based upon the successes and failures of previous phases. This is achieved through the monitoring of variables that have been identified as measures of project performance. Annual plant survival monitoring has been ongoing for the last three years and has contributed to the adaptive management of Phase II (Hart 2002). Fish species composition and distribution are being monitored by CDFG as part of Phase I, but the results are preliminary and have not yet been analyzed. The project has incorporated several features to increase the probability of success for providing habitat for native fish species, and monitoring will be used to determine the degree of success.

Plant survival and fish species composition will continue to be monitored through Phase II of the project, and any subsequent Phase III. A comprehensive monitoring plan is being developed for the Phase II project that will help answer questions about the effectiveness of habitat features in supporting targeted fish and wildlife species, and the ability of non-native species to become established in created, tidal wetlands.

Plant survival monitoring on Decker Island during Phase I has resulted in several important revegetation plan changes for Phase II. Revegetation monitoring documented significantly stressed or dead woody riparian plants. Stressors appear to be lack of water availability and soil salinity. Stressed plants showed increased susceptibility to borers and disease. As a result, Phase II will include plowing of the planting substrate areas prior to planting to increase the homogeneity of the soil, reduce the negative effects of salt layers, and improve water percolation and root penetration. It was also observed that woody plant species were naturally recruiting at lower elevations than where they were originally planted. This has resulted in the overall lowering of the Phase II project elevation “zones” on Decker Island to promote woody riparian plant establishment while minimizing maintenance, irrigation, and replanting efforts. Wetland plant species have been observed to rapidly and successfully recruit from natural propagules in the project area, resulting in the decision to lower planting densities in Phase II. Lower planting densities of plants that have been shown to recruit naturally should provide a substantial cost savings. Monitoring of survival rates has also resulted in changes to the types of species planted in Phase II: plants with poor survival rates will be replaced with new species or species with high survival rates, in consultation with CDFG.

The success of the revegetation efforts will be defined as an 80 percent survival rate after three years. Sampling will be conducted annually to determine the ratio of vegetation survival. Annual replanting will be conducted if the survival rate falls below 80 percent. DWR or CDFG may make adjustments in species or planting densities if necessary to improve plant survival rates.

1.4.2 Levee Reinforcement

As described above, excavated materials from Decker Island will be transported to Jersey, Bradford, and Van Sickle islands via in-channel barge. The barge will be anchored temporarily while offloading material. Fill material will be transported from the barge directly to the land side of the levee using a crane. The project will not impact existing vegetation or habitat on the waterside of the levees. Potential wave-action impacts to the waterside of the levees are expected to be minimal and insignificant, as well as short-term.

Approximately 43,500, 52,500, and 36,000 cubic yards of material will be required for the levee reinforcement work at Sites 1A, 1B, and 2, respectively on Jersey Island (Figure 3a). Material from a 22 acre borrow site located at the southeast corner of Jersey Island will be used to supplement the material obtained from Decker Island (Figure 3a). The material from the borrow site will mainly be used on the slopes and crown of the levee. On Bradford Island, approximately 51,000 cubic yards of material will be required for the levee reinforcement work at Site 1, and 69,000 cubic yards of material for Site 2 (Figure 4a). Project impacts are estimated to extend 100 ft landward of the existing levee toe on Jersey and Bradford islands.

On Van Sickle Island, Site 2 will be the only site receiving fill material from Decker Island during Phase II of the project, and will receive approximately 45,000 cubic yards of material (Figure 5a). Project impacts are estimated to extend 60 ft landward of the levee toe, including 40 ft permanently impacted by the new levee footprint, and an additional 20 ft temporarily disturbed during construction. Environmental impacts for the remaining sites identified on Van Sickle Island as in need of levee reinforcement will be the subject of a Supplemental CEQA document. This supplemental document will contain more detailed, site-specific impacts, and avoidance, minimization, and mitigation measures for the remainder of the sites on Van Sickle Island, pending appropriate surveys, permitting, and agency consultation. The future levee

rehabilitation sites are referred to in this document only on a cursory level to provide the reader with a more long-term picture of the project.

The rehabilitated levee slopes on Bradford, Jersey, and Van Sickle islands will be graded to be no steeper than 2:1 (horizontal to vertical). The slopes will be planted and straw will be placed. Specific attributes of each island are described below.

1.4.2.1 Jersey Island

The northwest side of Jersey Island borders the San Joaquin River from RM 10–13 (Figure 1). Jersey Island is approximately 3,500 acres and is owned by Iron House Sanitary District, which uses it to spread effluent waste and leases most of the property for cattle grazing. There are no private homes on the island, although a portion of the levee road (Station 160+00 to 330+00) is used as a county maintained road that provides access to the ferry servicing neighboring Bradford Island and Webb Tract. Reclamation District #830 maintains the levees protecting Jersey Island.

Levee reinforcement work will be conducted at three sites along Jersey Island, for a total of 16,500 linear feet of improvement (Figures 3a and 3b). Site 1A is the lower priority site for levee reinforcement on this island and is located along the east levee of Jersey Island adjacent to Taylor Slough, from Station 110+00 to Station 160+00. Site 1B is the higher priority site, and is located along the east levee of Jersey Island along Taylor Slough, from Station 160+00 to Station 220+00. Site 2 is located further along the levee on False River, near the ferry landing to Bradford and Webb Tract, from Station 290+00 to Station 335+00.

Existing conditions within the project sites on the landward side of the levee support mostly ruderal, weedy species along the levee slope (e.g., thistle species and wild radish [*Raphanus sativus*]), and grassland dominated by non-native species extending landward from the levee toe. A few areas along the landward side support small thickets of Himalayan blackberry, typed as “scrub shrub” habitat under AB360 (Appendix A). The levee slope is maintained by annual mowing and occasional herbicide applications, and the area extending from the landward toe is heavily disturbed by cattle grazing. From approximately Station 110+00 to 160+00, poison bait stations are used to control rodents, although many active burrows were observed along the landside slope. These burrows may provide suitable habitat for burrowing owls, a federal and state species of concern, discussed in more detail in Section 2.4.4 (Biological Resources). The waterside of the levee is ripped and vegetated by patches of Himalayan blackberry, California wild rose, and various thistle species. Some emergent wetland species (*Scirpus* and *Typha* spp.) have established along the waterside, but these are sparse and patchy. A variety of wildlife, including raptors, waterfowl, and small mammals, use the island for roosting, foraging, and shelter. Wildlife and plant species observed on Jersey Island during a reconnaissance survey by Stillwater Sciences staff are listed in Appendix B.

Material from an on-island borrow site will be used to supplement fill material obtained from Decker Island. This supplemental borrow site encompasses approximately 22 acres in the southeastern corner of the island (Figure 3a). The area was used for dredge disposal and contains the highest elevation point on Jersey Island. Piles of rubble and construction debris, and PG&E gas lines run through the center of the site and would be avoided during excavation activities. Towers for power lines traverse the site, and would also be avoided.

The area is now heavily disturbed by cattle grazing and the soils are compacted. Most of the borrow site where excavation would occur is bare or vegetated by non-native annual grasses and ruderal, herbaceous species such as bull thistle (*Cirsium vulgare*). A ditch with standing water creates the northeastern boundary of the borrow site. A few scattered, mature trees occur further east, and a more extensive

riparian forest has developed at the southeastern tip of the island. These areas are not within the borrow site and would thus not be impacted by excavation. Jackrabbits and ground squirrels were observed on the site, as were red-winged blackbirds, western tanager, and foraging great blue herons (see Appendix B).

1.4.2.2 Bradford Island

The north and west sides of Bradford Island are adjacent to the San Joaquin River from RM 13–16. Bradford Island is approximately 2,000 acres. There are multiple parcels and owners on Bradford Island, and several private residences abut the landward side of the levee. Currently, many of the parcels are used as pasture for grazing cattle.

Levee reinforcement work will be conducted at two sites along Bradford Island, for a total of 16,500 linear feet of improvement (Figures 4a and 4b). Site 1 is the lower priority site on this island and is located along the east levee of Bradford Island at the boat launch along Fishermans Cut, from Station 0+00 to Station 70+00. Site 2 is the higher priority site and is located further north on the levee, along both Fishermans Cut and the San Joaquin River, from Station 70+00 to Station 165+00.

Bradford Island is more densely vegetated and provides more natural riparian and wetland habitat than Jersey Island. However, most of the habitat along the landward levee slope is heavily disturbed, supporting the same suite of non-native annual grasses and ruderal, weedy species as seen on Jersey Island. Extending landward from the toe of the levee, dominant species include poison hemlock (*Conium maculatum*), fennel (*Foeniculum vulgare*), and perennial pepperweed (*Lepidium latifolium*). Within Site 2 there are denser patches of riparian and scrub vegetation, including willows and Himalayan blackberry. The results of CDFG's AB360 habitat assessment on Bradford Island indicate that 2.86 acres of riparian forest, and 3.78 acres of scrub shrub habitat on the landward side of the levee would be impacted by this project. Several small patches of ponded or saturated soils also support wetland species such as common tule (*Scirpus acutus*), and curly doc (*Rumex crispus*). CDFG determined that 0.45 acres of freshwater marsh on the landward side of the levee would be impacted by the project. The loss of habitat will be mitigated on the island, and is discussed further in Section 2.4.4.

The waterside of the levee is riprapped, supporting species such as wild radish, Himalayan blackberry, and California rose. As on Jersey Island, some areas supporting patches of freshwater marsh species such as common tule, common reed (*Phragmites australis*), and cattail (*Typha* spp.) also occur, though the patches on Bradford Island are more extensive. A small patch of Mason's lilaeopsis was observed on the waterside under the eucalyptus grove immediately north of the ferry landing at Station 0+00. No waterside impacts are anticipated as part of this project.

Wildlife species observed on the island were similar to those observed on Jersey Island. A white-tailed kite was observed roosting on the western side of the island. No other special status wildlife species were observed. Wildlife and plant species observed on Bradford Island during a reconnaissance survey by Stillwater Sciences staff are listed in Appendix B.

1.4.2.3 Van Sickle Island

Van Sickle Island is located on the eastern edge of Suisun Marsh where the Sacramento and San Joaquin Rivers join. The eastern half of the island is considered to be within the legal limits of the Delta. Van Sickle Island encompasses 2,362 acres of managed wetlands, adjacent to CDFG's 8,500 acre Grizzly Island Wildlife Area. There are multiple parcels and owners on Van Sickle Island, with current land use

on most of the island consisting of private duck clubs. A few residences are maintained on the island, but it is primarily used as for recreational hunting and has been managed as a waterfowl area for over fifty years. Water levels within the island are controlled by manually operated gates through the levee at various locations.

The current levee system is in need of rehabilitation and maintenance due to subsidence and erosion. Levee reinforcement work will eventually be conducted at four sites along Van Sickle, for a total of 38,000 linear feet (7.2 miles) of improvement (Figures 5a–5c). Approximately 500,000 to one million cubic yards of material will be required for the levee reinforcement work on the island, of which 45,000 cubic yards will come from the Decker Island Phase II project. Site 1 is along Montezuma Slough from Sta. 0+00 to Sta. 80+00. Site 2 is along the Sacramento River levee from Station 80+00 to Station 125+00. Site 3 is along Spoonbill Creek and extends from Station 125+00 to Station 320+00. Site 4 is also along Montezuma Slough from Station 455+00 to Station 514+13. The fill material from Decker Island will be used to reinforce the levee at Site 2. Site 2 is the only site on Van Sickle Island covered by this Initial Study/Mitigated Negative Declaration. The fill material for the remaining three sites will come from future dredge disposal projects as part of the Long Term Management Strategy (LTMS) for beneficial reuse of dredge material (LTMS 2001). A Supplemental CEQA document will be developed for the future work.

The majority of the Phase II project area (Site 2) on Van Sickle Island is jurisdictional wetland habitat, exhibiting appropriate hydrology (standing water or saturated soils) and vegetation. For the Decker Island disposal area the landward side from the levee toe is primarily brackish marsh, dominated by pickleweed (*Salicornia* spp.), with some areas of ponded open water and canals that support common tule, cattail, and common reed. The waterside of the levee contains similar freshwater marsh species. Four healthy patches of Delta tule pea (*Lathyrus jepsonii*), a federal species of concern, were observed on the waterside of Site 2. No waterside impacts are anticipated as part of this project. Wildlife species observed included great blue heron, black-crowned night heron, great egret, mallard, black-necked stilt, ring-necked pheasant, river otter, and three species of snakes. Wildlife and plant species observed on Van Sickle Island during a reconnaissance survey by Stillwater Sciences staff are listed in Appendix B.

Because the Van Sickle Island site is part of Suisun Marsh and encompasses jurisdictional wetlands, additional restoration will be required to mitigate for loss of brackish marsh habitat and associated impacts to TES species, including the salt marsh harvest mouse. These impacts, as well as minimization and mitigation strategies are discussed in more detail in Section 2.4.4.

1.4.3 Permitting and agency consultation

Implementation of the project will require the following agency consultation and permitting:

Decker Island Habitat Development

1. Clean Water Act Section 401: Regional Water Quality Control Board waiver of water quality certification
2. Clean Water Act Section 404: Letter of permission from the USACE
3. California Fish and Game Code Section 1600/1601: CDFG Streambed Alteration Agreement
4. Surface Mining and Reclamation Act: SMARA permit required for excavation on Decker Island

Levee Reinforcement – Jersey and Bradford Islands

1. Clean Water Act Section 404: coverage under Nationwide Permit #3 (Maintenance) for fill of small patches of wetlands on the landward side of Bradford Island.
2. Delta Flood Protection Act/AB360: mitigation for loss of AB360 habitat types has already been coordinated with CDFG.

3. Informal consultation with CDFG and USFWS regarding TES species (see Section 2.4.4), specifically burrowing owl and giant garter snake.
4. California Fish and Game Code Section 1600/1601: CDFG Streambed Alteration Agreement

Levee Reinforcement – Van Sickle Island

1. Clean Water Act Section 404: Individual 404 permit from USACE for fill of wetlands.
2. Endangered Species Act Section 7 Consultation with USFWS and NOAA Fisheries regarding TES species (see Section 2.4.4)
3. San Francisco Bay Conservation and Development Commission (BCDC) permit will be required for work in Suisun Marsh.
4. Informal consultation with CDFG regarding impacts to TES species and AB360 habitat types
5. California Fish and Game Code Section 1600/1601: CDFG Streambed Alteration Agreement

2 ENVIRONMENTAL IMPACTS

2.1 Background

| | |
|---|--|
| 1. Project Title | Decker Island Habitat Development, Phase II |
| 2. Lead Agency Name and Address | California Department of Water Resources Bay Delta Levees P.O. Box 942836 Sacramento, CA 94236-0001 |
| 3. Contact People and Phone Numbers | Kent Nelson 916.651.7019 |
| 4. Project Location: | Decker Island, Jersey Island, Bradford Island, and Van Sickle Island, Sacramento-San Joaquin Delta, Suisun Marsh |
| 5. Project Sponsor's Name and Address | Reclamation District #830 (Jersey Island), RD #2059 (Bradford Island), and RD #1607 (Van Sickle Island) |
| 6. General Plan Description | Decker Island: Extensive Agriculture Jersey Island: Delta Recreational Bradford Island: Delta Recreational Van Sickle Island: Marsh |
| 7. Zoning | Decker Island: A160 (Agriculture) Jersey Island: A2/A4 (Agriculture) Bradford Island: A3 (Agriculture) Van Sickle Island: MP (Marsh Preservation) |
| 8. Description of Project | Habitat development on Decker Island and levee reinforcement on Jersey, Bradford, and Van Sickle islands |
| 9. Surrounding Land Uses and Setting | Decker Island: Open water, recreation Jersey Island: Open water, recreation, marsh preservation, agriculture Bradford Island: Open water, recreation, agriculture Van Sickle Island: Open water, marsh preservation, recreation |
| 10. Other agencies whose approval is required | USACE, CDFG, San Francisco Bay Conservation and Development Commission (BCDC), USFWS, NOAA Fisheries. |

2.2 Environmental Factors Potentially Affected

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input checked="" type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Hazards and Hazardous Materials | <input checked="" type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use and Planning |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Population and Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities and Service Systems | <input type="checkbox"/> Mandatory Findings of Significance | |

2.3 Summary of Mitigation for Environmental Impacts

Assessment and mitigation for project impacts to AB360 habitat types, in combination with more specific mitigation for wetlands under Clean Water Act Section 404 requirements, and habitat consideration for threatened, endangered, or sensitive (TES) species under the Endangered Species Act or related regulations, address most of the issues associated with project-related habitat impacts or modifications. Tables 1 and 2 summarize the potential environmental impacts and mitigation that would result from the Phase II Project. The impacts, avoidance, minimization, and mitigation measures are discussed in more detail in Section 2.4.4. The major TES species mitigation measures incorporated as part of this project are summarized in this section.

Table 1. Summary of potential issues and target acreages by island for potential impact/restoration.

| Island | Estimated linear feet of impact | Target acreage of restoration | Potential CEQA-related issues |
|----------------------------|---|---|---|
| Decker Island | N/A | 10.6 acres of habitat development (riparian, wetland, open water) | increased turbidity during construction |
| Jersey Island | 16,500 linear feet of levee reinforcement | N/A | impacts to TES species (burrowing owl and giant garter snake) |
| Bradford Island | 16,500 linear feet of levee reinforcement | N/A | impacts to < 0.5 acres of jurisdictional wetlands; impacts to AB360 habitat types |
| Van Sickle Island (Site 2) | 4,500 linear feet of levee reinforcement; | 6.2 acres of on-site mitigation for loss of jurisdictional wetlands and TES species habitat | impacts to TES species (salt marsh harvest mouse, California clapper rail); impacts to 6.2 acres of jurisdictional wetlands; impacts to AB360 habitat types |

Table 2. Results of AB360 habitat assessments and associated mitigation will be negotiated with CDFG and project proponent for areas to receive dredge spoils from Decker Island Phase II project.

See Appendix A for specific acreage and maps by habitat type.

| Island | AB360 habitat types affected | Total acreage of AB360 habitat types impacted by project | Total mitigation acreage |
|---------------------|--|--|--------------------------------|
| Bradford | Freshwater marsh, scrub-shrub, riparian forest | 7.09 ^a | 16.59 |
| Jersey | Scrub-shrub | Less than significant | No mitigation required by CDFG |
| Van Sickle (Site 2) | Freshwater marsh | * | * |

^a This includes 2.86 acres of riparian forest, 3.78 acres of scrub shrub habitat, and 0.45 acres of freshwater marsh on the landward side of the levee determined by CDFG to be impacted by this project.

*Primary impact will be to brackish marsh, which is not included as an AB360 habitat type. Acreage is being mitigated under an Individual USACE 404 permit. Assuming 4,500 linear ft of levee and a 60 ft wide project footprint, the wetland impact will be approximately 6.2 acres. Mitigation for AB360 habitat impacts on Site 2 will be subsumed in the 404 mitigation.

2.3.1 Impacts/Mitigation on Jersey Island

On Jersey Island, active ground squirrel and gopher burrows were observed along the lower priority portion of Site 1 (Station 110+00 to 160+00), both on the levee slope and in some areas extending further landward. These areas may provide habitat for the giant garter snake (Federally listed Threatened, State listed Threatened) and burrowing owl (Federal species of concern, State species of special concern). As project construction is scheduled to occur from September 2003 to mid-April 2004, outside of the typical work window for the giant garter snake, consultation with USFWS is required. Consultation with USFWS and CDFG was initiated at a meeting held on June 18, 2003. Pre-construction surveys for burrowing owls will be conducted, where burrows exist, per CDFG guidelines. If owls are present at the site, appropriate minimization and mitigation measures will be negotiated with CDFG and USFWS. One-way burrow doors are a potential mitigation measure to force the owls to abandon their burrow. However, burrowing owls can relocate to any number of suitable adjacent burrows that are outside the area of project impact.

2.3.2 Impacts/Mitigation on Van Sickle Island

2.3.2.1 TES Plants

The following list of plant species have recorded occurrences in the vicinity of the project and have potential suitable habitat at the project site (Appendix E):

- Heartscale (*Atriplex cordulata*) (Federal Species of Concern, CNPS 1B)
- Brittscale (*Atriplex depressa*) (FSC, CNPS 1B)
- San Joaquin saltbush (*Atriplex joaquiniana*) (FSC, CNPS 1B)
- Bristly sedge (*Carex comosa*) (CNPS 2)
- Suisun thistle (*Cirsium hydrophilum* var. *hydrophilum*) (Federally listed Endangered, CNPS 1B)
- Soft bird's-beak (*Cordylanthus mollis* ssp. *mollis*) (Federally listed Endangered, rare in CA, CNPS 1B)
- Hispid bird's-beak (*Cordylanthus mollis* ssp. *hispidus*) (FSC, CNPS 1B)

A detailed CDFG protocol-level pre-construction botanical survey will be conducted within the project footprint for these species. If any of the above species are found, they will be replanted in a suitable location away from the project site.

2.3.2.2 TES Wildlife

The California clapper rail has potential habitat occurring in the project area. No California clapper rails were observed during the reconnaissance survey, however, protocol-level clapper rail surveys will be completed prior to construction on Van Sickle Island. These surveys will also look for California black rails. Surveys will be conducted in 2004, prior to project construction and during the appropriate season for rails. If California clapper rails or black rails are observed on the site, construction will occur outside the breeding season of the rail, and wetland habitat mitigation and minimization measures implemented for salt marsh harvest mouse (described below) will be sufficient to protect and/or enhance habitat for these species.

Abundant pickleweed and coastal brackish marsh habitats are typical habitat associations of saltmarsh common yellowthroat, Suisun shrew, and Suisun song sparrow. Construction would occur outside the breeding season for the yellowthroat and song sparrow, and wetland habitat mitigation and avoidance and minimization measures implemented for salt marsh harvest mouse (described below) will be sufficient to protect and/or enhance habitat for these three species.

The salt-marsh harvest mouse (Federal and State Endangered, State Fully Protected) was observed in 1995 on the west side of Van Sickle Island in a dredge spoils site that had been revegetated (CNDDDB 2003). Dense stands of pickleweed-dominated brackish marsh vegetation, the preferred habitat of the salt-marsh harvest mouse, dominates the Site 2 project area and rodent runways were observed in the pickleweed during the reconnaissance survey. Therefore the species is assumed to be present within the project site. Appropriate mitigation and minimization measures will be negotiated pending the USACE 404 permit and ESA Section 7 Consultation, and may include the following. These measures will be designed to compensate for loss of any potential habitat for the California clapper rail, California black rail, Suisun shrew, saltmarsh common yellowthroat, and Suisun song sparrow.

Potential salt marsh harvest mouse minimization measures

1. placement of an exclusion fence surrounding the project area, per USFWS and CDFG specifications (i.e., placed a certain depth into the soil, of a certain height and mesh size),
2. trapping and relocation of mice by a qualified biologist to a suitable location outside the project area, and/or
3. hand removal and clearing of pickleweed vegetation prior to project construction to make the site less suitable for mouse habitat and encourage mice to relocate.

On-site mitigation for Phase II Decker project

Appropriate locations for on-site mitigation have already been identified by the project proponent (see Figure 5c), to mitigate for loss of wetlands and salt marsh harvest mouse habitat as a result of the Phase II levee reinforcement work. These areas were identified using CDFG vegetation mapping of Van Sickle Island, and are upland sites with annual or perennial grasses that provide access from the levee road for equipment. The areas would be prioritized based on their potential for hydrologic connectivity with adjacent wetlands, potential for restoration of appropriate salt marsh harvest mouse habitat, and landowner willingness to dedicate the property. The grading, revegetation design, monitoring plan, and development of success criteria will be conducted in consultation with the USFWS and CDFG.

Off-site mitigation for future work on Van Sickle Island

Future project impacts to wetlands and salt marsh harvest mouse habitat (i.e., to rehabilitate Site 1, 3, and 4) on Van Sickle Island may require additional mitigation than the acreage currently available on the island. Some off-site mitigation may be required within Suisun Marsh. Mitigation to compensate for loss of pickleweed habitat used by the salt marsh harvest mouse will require conversion of diked wetlands to tidal marsh. DWR is actively pursuing opportunities to purchase several parcels that would accommodate this future mitigation need within the Suisun Marsh, including the Denverton and Meins Landing Duck Club properties. Using Meins Landing as an example, below is a description of the type of restoration that DWR is considering as mitigation for future work on Van Sickle Island.

Meins Landing is a 668-acre duck club located in Suisun Marsh (Solano County) south of Bird's Landing Road and to the north and east of Montezuma Slough. Across Montezuma Slough is the Department of Fish and Game Grizzly Island Wildlife Area. Meins Landing is currently managed as a duck-hunting club with over 500 acres of managed seasonal wetlands. The club also has a permanent pond covering 60 acres adjacent to Montezuma Slough and is isolated from the managed wetlands by a permanent levee. The remainder of the property consists of less than 40 acres of tidal wetlands, and 62 acres of high ground which rises toward low hills and clubhouses on 3 acres. Water is circulated through a system of north south ditches and a perimeter ditch by a series of pumps and pipes which feeds and drains the managed wetlands.

Plants commonly found in the managed wetlands and ponds include alkali bulrush (*Scripus maritimus*), cattail (*Typha spp.*), saltgrass (*Distichlis spicata*), pickleweed (*Salicornia virginica*), smartweed (*Polygonium spp.*), water grass (*Echinochoa spp.*), curly dock (*Rumex crispus*), and brass buttons (*Cotula coronopifolia*) with a large area is dominated by cocklebur (*Xanthium spp.*).

The Meins Landing property is only slightly subsided and rises to low hills at the north end of the property. The site could be opened to create tidal wetlands without extensive filling, recontouring, or earthmoving activity. The high relief would allow for a large amount of transition habitat acreage from tidal wetland to upland habitat. Some scalloping of the upper marsh habitat would create a large amount of edge transitioning into pickleweed habitat. The permanent pond is isolated from the rest of the property and could be permanently managed a deep-water habitat.

2.4 Initial Study Checklist

2.4.1 Aesthetics

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: | | | | |
| a) Have a substantial adverse effect on a scenic vista? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|------------------------------|-------------------------------------|
| c) Substantially degrade the existing visual character or quality of the site and its surroundings? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

The project will have no impact on the aesthetic quality of the project area. Reinforcement of the levees should improve the aesthetic quality of the levee. In addition, habitat development on Decker Island will result in a net increase in the aesthetic quality of the project area, as both in-channel and terrestrial habitat would be created.

2.4.2 Agricultural Resources

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: | | | | |
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural land? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

While Decker Island is zoned for agriculture and some areas on the island are in agricultural production, the project area is confined to CDFG-owned property and project activities and results will not impact adjacent agricultural areas (Solano County 1997). Jersey and Bradford Islands are also zoned for agriculture, but the dominant land use is delta recreation (Contra Costa County 1996). Project activities on Jersey and Bradford islands should improve agricultural resources on these islands by strengthening levees surrounding agricultural production areas. There are no agricultural resources on Van Sickle Island.

2.4.3 Air Quality

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project: | | | | |
| a) Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

Although heavy construction equipment will be required to grade and place levee fill, the release of fumes and dust will be less than significant and is not likely to cause any long- or short-term negative impacts.

2.4.4 Biological Resources

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|--------------------------|
| Would the project: | | | | |
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: | | | | |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

2.4.4.1 Habitat Impacts (AB360)

The results of AB360 habitat assessments (see Section 1.3.2 for background) for this project are summarized in Table 2 above. Assessments on Bradford Island indicated that 2.86 acres of riparian forest, 3.78 acres of scrub shrub habitat, and 0.45 acres of freshwater marsh on the landward side of the levee would be impacted by this project (D. Showers, pers. comm., 2003). Mitigation for levee reinforcement work on Bradford Island includes habitat development and enhancement on DWR-owned and managed Parcel 19 along the west bank of Bradford Island. This mitigation agreement has already been negotiated by the CDFG and DWR with Reclamation District 2059 for levee reinforcement activities on Bradford Island. A levee footprint of 100 ft was determined to require 16.59 acres of habitat mitigation, at a 3:1 ratio for impacts to riparian forest and scrub-shrub, and a 1:1 ratio for loss of freshwater marsh. This acreage is in addition to the 32 acres already being developed on Parcel 19 for mitigation under previous levee reinforcement projects.

CDFG has determined that minimal amounts of scrub-shrub habitat (primarily Himalayan blackberry thickets) will be impacted by the project on Jersey Island, and therefore, no AB360 mitigation is required for the levee reinforcement work.

Impacts on Site 2 of Van Sickle Island would be primarily to brackish marsh, which is not an AB360 habitat type. The wetland impacts will be mitigated on-site under an Individual USACE Section 404 permit, and any impacts to freshwater marsh, as determined by AB360 habitat assessments at Site 2, will be accounted for in the 404 mitigation. Potential on-site mitigation sites have been identified and are discussed in more detail in Section 2.3.2 under Van Sickle Island TES Wildlife. The application for an Individual 404 permit will be filed during the review period of this document. Impacts to AB360 habitat types for the remaining three sites of future levee rehabilitation work on Van Sickle Island have yet to be determined.

2.4.4.2 TES Species and Sensitive Habitats

State and federal threatened, endangered, or sensitive (TES) species potentially occurring in the vicinity of the project were identified through: (a) a site visit, (b) reconnaissance survey for plants and wildlife surveyed during seasonally appropriate periods, and (c) search of California Natural Diversity Database (CNDDB) of the three USGS 7.5 minute quadrangles covering the project area, which includes Decker, Bradford, Jersey, and Van Sickle islands (USGS quads: Jersey Island, Antioch North, and Honker Bay), and the twelve surrounding quadrangles (Fairfield South, Denverton, Birds Landing, Rio Vista, Isleton, Bouldin Island, Woodward Island, Brentwood, Antioch South, Clayton, Walnut Creek and Vine Hill).

Decker Island

Several patches of Mason's lilaeopsis (*Lilaeopsis masonii*), a federal plant species of concern and California "rare" plant, were found at the northern tip of Decker Island (DWR 1998). Special status species will not be impacted by the project because they will be avoided during construction, and will ultimately benefit from the habitat enhancement efforts. Although there is a past record of a Swainson's hawk nesting on the proposed mitigation area, they were not seen during Phase I surveys (DWR 1998), and none have been observed during recent site visits by DWR. Potential nesting trees would not be disturbed during project construction. Furthermore, the Decker Island Habitat Development project is designed to create habitat for numerous TES species found within the Delta, including Delta smelt, Chinook salmon, splittail, Mason's lilaeopsis, Delta mudwort, lowthroat, and Valley elderberry longhorn beetle. Potential impacts to fish species from increased turbidity levels as a result of habitat development are expected to be temporary (only during connection to Phase I channels) and insignificant with implementation of erosion control BMPs (discussed in Section 1.4.1.1). Monitoring will be conducted during project construction to ensure that turbidity levels are not harmful to fish, as was done during the Phase I project.

Jersey and Bradford Islands

Appendix D includes all of the TES species or communities identified in the CNDDB for the Jersey Island USGS 7.5 minute quadrangle (includes both Jersey and Bradford islands on this quadrangle) and 8 surrounding quads. CDFG conducted AB360 Habitat Assessments in December 1999 (Appendix A). In addition, a site visit to Jersey and Bradford islands was conducted on May 2, 2003 to review the project and determine extent of impacts. A follow-up, reconnaissance-level biological survey was conducted on May 22, 2003 by staff from Stillwater Sciences, covering the levee project areas along the eastern sides of both islands and the borrow site on Jersey Island (Figures 3a and 4a).

The majority of vegetation along the Bradford levee slope and extending landward 30–100 ft from the levee toe had been cleared and grubbed prior to the survey, so only surrounding vegetation and remnant patches could be assessed. Herbarium specimens at the University of California, Berkeley Jepson

Herbarium were reviewed for rare plant species likely to occur in the project area prior to the field survey. The field crew included a senior ecologist/botanist and biologist who drove along the levee roads, stopping periodically to survey the site, identify plant and wildlife species, potential wetland areas, and assess potential habitat conditions for TES species. All plant and wildlife species observed during the survey were recorded, and are summarized in Appendix B.

Appendix D indicates whether the species have been documented to occur within the project area, or were found to have potential habitat during the reconnaissance survey. Those species that have the greatest potential to occur or have been observed within the project area are further described and addressed below.

Plants

Contra Costa goldfields (*Lasthenia conjugens*) (Endangered) is the only federally listed plant species with potential habitat occurring in the project area. This species has a California Native Plant Society (CNPS) designation of 1B. A single occurrence has been recorded in a neighboring quadrangle (Antioch North) but occurs on the mainland in the city of Antioch (CNDDDB 2003). The species was not observed during the May 22, 2003 reconnaissance survey, and is unlikely to occur given the highly disturbed landscape within the project area. No long-term or short-term impacts are anticipated for this species.

In addition to Contra Costa goldfields, the following federal plant species of special concern (CNPS designation of 1B) have potential suitable habitat occurring in or near the project area or have a recorded CNDDDB occurrence in the project quadrangle:

- Mason's lilaeopsis (*Lilaeopsis masonii*)
- Suisun marsh aster (*Aster lentus*)
- Delta tule pea (*Lathyrus jepsonii* var *jepsonii*)
- Sanford's arrowhead (*Sagittaria sanfordii*)
- Northern California black walnut (*Juglans hindsii*)

Mason's lilaeopsis is also listed as Rare under the Native Plant Protection Act of 1977. This species was observed during the reconnaissance survey on the waterside under a eucalyptus grove just north of the ferry landing on Bradford Island (Figure 4a, Station 0+00). Suitable habitat for this species occurs on the waterside of the levee only, and will not be impacted by the project.

Suisun marsh aster, Delta tule pea, and Sanford's arrowhead also have suitable habitat only on the waterside of the project area, and therefore will not be affected by project activities. Suisun marsh aster and Delta tule pea have recorded occurrences on the Jersey Island quadrangle (CNDDDB 2003), but outside the project area. Sanford's arrowhead has recorded occurrences in a neighboring quadrangle (Isleton) only (CNDDDB 2003). None of the species were observed during the reconnaissance survey. No long-term or short-term impacts are anticipated for these species.

California black walnut is thought to be extirpated in the area covered by the Jersey Island quad (CNDDDB 2003). Although its native habitat is typically not within Delta islands (typically found in canyons and valleys 50–200 m in elevation), the species has been widely planted, hybridizes readily with English walnut, and has been naturalized from cultivation in many areas. One such tree was observed on Bradford Island. The tree was located on the waterside of the levee and will not be affected by the project. No long- or short-term impacts are anticipated for this species.

The following plant species have no federal or state status, but carry a CNPS designation of 2 (plants are rare, threatened, or endangered in California but are more common elsewhere) and have potential suitable habitat within the project area:

- Delta mudwort (*Limosella subulata*)
- Eel-grass pondweed (*Potamogeton zosteriformis*)
- Rose-mallow (*Hibiscus lasiocarpus*)
- Marsh skullcap (*Scutellaria galericulata*)
- Blue skullcap (*Scutellaria lateriflora*)
- Bristly sedge (*Carex comosa*)

Suitable habitat for these species occurs on the waterside of the levee only and will not be impacted by project activities. In addition, none of these species were observed during the reconnaissance survey. Although the survey date occurred before the flowering periods of eel-grass pondweed, rose-mallow, and marsh skullcap, they are identifiable by their vegetative structures. Eel-grass pondweed and rose-mallow could have been identified to species by vegetative structures, and marsh-skullcap at least to genus (no *Scutellaria* were observed during the reconnaissance survey). No long- or short-term impacts are anticipated for these species.

Fish

Bradford and Jersey islands are located within designated critical habitat for Delta smelt (Federally listed Threatened). Additional special status fish species with the potential to occur in waterways adjacent to Van Sickle Island include Sacramento winter-run Chinook salmon (Federally listed Endangered), Central Valley spring-run Chinook salmon (Federally listed Threatened), Central Valley fall-run Chinook salmon (Federal candidate species for listing), Sacramento splittail (Federally listed Threatened), and Sacramento perch (Federal species of concern). No impacts to the waterside of Van Sickle Island will occur as a result of project activities, therefore, no impacts to fish in waterways adjacent to the island are anticipated as a result of project activities. Impacts to the waterside of the levee due to wave action from barge transport are not expected to impact fish species.

Wildlife

There are three known occurrences of giant garter snake (Federally listed Threatened, State listed Threatened) in the project quadrangle (CNDDDB 2003). One adult giant garter snake was captured in 2002 on the southwest levee of Webb Tract, across Fisherman's Cut, opposite the Bradford project area. The Bradford Island levees are well maintained and the soil is either too compact or too saturated to support rodent burrows that the snakes typically use as upland refugia during hibernation. No small mammal burrows or giant garter snakes were observed during the reconnaissance survey on Bradford Island, and no impacts to this species are anticipated on Bradford Island.

On Jersey Island, active ground squirrel and gopher burrows were observed (despite the use of poison bait stations) along the lower priority portion of Site 1 (Station 110+00 to 160+00), both on the levee slope and in some areas extending further landward. As project construction is scheduled to occur from September 2003 to mid-April 2004, outside of the typical work window for the giant garter snake, consultation with USFWS is required. Consultation with USFWS and CDFG was initiated at a meeting held on June 18, 2003.

Potential burrowing owl (Federal species of concern, State species of special concern) habitat was observed during the reconnaissance survey on Jersey Island between Stations 110+00 and 160+00. As mentioned above, active ground squirrel and gopher burrows were extensive along the levee slope and in

some areas extended further landward from the levee toe. No owls or signs of owls (e.g., white wash or owl pellets around burrow entrances) were observed. In addition, marginal habitat was observed on the Jersey Island borrow site (see Figure 3a), with some burrows in areas of less consolidated, sandier soils at higher elevation areas. Burrowing owls are known to occupy ground squirrel burrows located on levees and have been observed in the Montezuma Hills area and on Brannan Island, within a 6-mile radius of the project area (CNDDDB 2003). Pre-construction surveys for burrowing owls will be conducted, where burrows exist, per CDFG guidelines. If owls are present at the site, appropriate minimization and mitigation measures will be negotiated with CDFG and USFWS. One-way burrow doors are a potential mitigation measure to force the owls to abandon their burrow. However, burrowing owls can relocate to any number of suitable adjacent burrows that are outside the area of project impact.

Western pond turtles (State species of special concern) are known to occur in the project area. A western pond turtle was observed on the east side of Jersey Island within the project area (CNDDDB 2003). Other western pond turtles have been noted within a 2-mile radius in areas neighboring the project area. The species typically occurs on the waterside of the levee only and no impacts are expected as a result of project activities.

In addition to the giant garter snake, burrowing owl, and pond turtle, several wildlife species of concern also have potential foraging habitat in the project area:

- White-tailed kite (Federal special concern, State Fully Protected)
- Swainson's hawk (Federal special concern, State Threatened)
- Great blue heron (nesting populations are sensitive)

The proposed project will not disturb potential white-tailed kite or Swainson's hawk nesting trees or roost sites during the construction period. The project therefore is anticipated to have a less than significant or no impact on nesting, and no long-term impacts are anticipated. However, short-term impacts to foraging habitat during construction may be experienced. A foraging Swainson's hawk was observed on Jersey Island during the CDFG 1999 AB360 habitat assessment (see Appendix A). The majority of Swainson's hawks depart for South American wintering grounds in September and October (Bloom 1980; Grinnell and Miller 1944, as cited in Zeiner et al. 1998) and will likely be absent from the project area during the construction period. However, overwintering hawks have been recorded in the Delta region (Herzog 1996). Jersey Island lacks adequate perching sites and no raptors were observed during the reconnaissance survey. Short-term impacts to foraging habitat during construction may be experienced, but these would be temporary and small-scale compared to the available foraging habitat island-wide.

Individual great blue herons were observed foraging during a site visit to Jersey Island, but no nesting colonies were observed within the vicinity of the project area or the borrow site. Construction activities are also anticipated to occur from September to March, outside of the breeding season. The project therefore is anticipated to have no impact on nesting during project implementation, and no long-term impacts are anticipated. Short-term impacts to foraging habitat during construction may be experienced, but these would be temporary and small-scale compared to the available foraging habitat island-wide.

Wetlands

On Bradford Island there are a few small patches of freshwater wetlands on the landward side of the levee that fall within the 100 ft project footprint (e.g., near Stations 30+00 and 160+00). These areas are in total less than 0.5 acres, and the project will be covered under USACE Nationwide General Permit 3 for Maintenance. This permit authorizes the repair, rehabilitation, or replacement of any previously authorized currently serviceable structure or fill, provided the work does not differ from what was

originally permitted. Minor deviations are allowed due to changes in construction codes or safety standards (e.g., levee reconstruction does not exceed Public Law 89-99) (Champ 1995).

Terrestrial Natural Communities

Coastal and Valley Freshwater Marsh exists on the waterside of the Bradford project area and will not be impacted by project activities.

Van Sickle Island

Appendix E includes all of the TES species or communities identified in the CNDDDB for the vicinity of Van Sickle Island (Honker Bay and Antioch North quadrangles, and surrounding quads), and indicates whether the species have been documented to occur in the project area. A reconnaissance-level survey was conducted on June 11, 2003 on Site 2, the portion of Van Sickle Island to receive material from Decker Island (Station 70+00 to 130+00) (Figure 5a). Those species that have the greatest potential to occur or have been observed within the project area are further described and addressed below. The mitigation measures presented below and the analysis of potential impacts is restricted to the 4,500 linear ft of levee (and 60 ft project footprint) that constitutes Site 2. Any future work on the island would require additional biological surveys, as well as additional avoidance, minimization, and mitigation measures pending Section 404 and Section 7 consultation in late 2003/early 2004 with appropriate agencies, and mitigation for impacts to AB360 habitat types pending assessment and negotiation with CDFG.

The reconnaissance-level survey of Site 2 was conducted by a senior ecologist/botanist and biologist who examined vegetation along 150 ft transects perpendicular to the levee toe at every 1000 ft station marker. The crew then examined the site for up to approximately 150 ft on either side of the transect. The crew identified and recorded all plant and wildlife species, extent of potential wetland areas, and assessed potential habitat conditions for TES species. All plant and wildlife species observed during the survey were recorded, and are summarized in Appendix B. Herbarium specimens at the University of California, Berkeley Jepson Herbarium were reviewed for rare plant species likely to occur in the project area prior to the field survey.

Plants

The following list of plants have recorded occurrences on Van Sickle Island (CNDDDB 2003) or were observed during the reconnaissance survey (Appendix E):

- Suisun marsh aster (*Aster lentus*) (Federal Special Concern, CNPS 1B)
- Delta tule pea (*Lathyrus jepsonii* var *jepsonii*) (FSC, CNPS 1B)
- Mason's lilaeopsis (*Lilaeopsis masonii*) (FSC, rare in CA, CNPS 1B)
- Delta mudwort (*Limosella subulata*) (CNPS 2)

Several healthy patches of Delta tule pea were observed on the waterside of the levee within Site 2 during a reconnaissance survey. Suitable habitat for all four species only occurs on the waterside of the levee, which will not be impacted by project activities. No short-term or long-term impacts are anticipated for these species.

The following list of plant species have recorded occurrences in the vicinity of the project (including surrounding quads) and have potential suitable habitat at the project site (Appendix E):

- Heartscale (*Atriplex cordulata*) (FSC, CNPS 1B)

- Britblescale (*Atriplex depressa*) (FSC, CNPS 1B)
- San Joaquin saltbush (*Atriplex joaquiniana*) (FSC, CNPS 1B)
- Bristly sedge (*Carex comosa*) (CNPS 2)
- Suisun thistle (*Cirsium hydrophilum* var. *hydrophilum*) (Federally listed Endangered, CNPS 1B)
- Soft bird's-beak (*Cordylanthus mollis* ssp. *mollis*) (Federally listed Endangered, rare in CA, CNPS 1B)
- Hispid bird's-beak (*Cordylanthus mollis* ssp. *hispidus*) (FSC, CNPS 1B)

A detailed CDFG protocol-level pre-construction botanical survey will be conducted within the project footprint for these species. If any of the above species are found, they will be replanted in a suitable location away from the project site. None of these species were observed during the reconnaissance survey. Although the survey date occurred before the flowering periods of Hispid bird's beak and soft bird's beak, they would have been identifiable by their vegetative structures at least to genus. No *Cordylanthus* species of any type were observed during the reconnaissance survey. The survey was also conducted before the flowering period for Suisun thistle. *Cirsium vulgare* was the only *Cirsium* species observed, and was found on the levee slope or crown in heavily disturbed upland areas where Suisun thistle would not be likely to occur. No *Cirsium* species were observed during the reconnaissance survey within the salt/brackish marsh that extended landward from the levee toe. Impacts to these species are not anticipated as a result of project implementation.

The following species also have recorded occurrences in the vicinity of the project (including surrounding quads), but have potential suitable habitat only on the waterside of the levee at the project site and will thus not be impacted by the project:

- Northern California black walnut (*Juglans hindsii*) (FSC, 1B)
- Eel-grass pondweed (*Potamogeton zosteriformis*) (CNPS 2)
- Sanford's arrowhead (*Sagittaria sanfordii*) (FSC, 1B)
- Marsh skullcap (*Scutellaria galericulata*) (CNPS 2)
- Blue skullcap (*Scutellaria lateriflora*) (CNPS 2)
- Rose-mallow (*Hibiscus lasiocarpus*) (CNPS 2)

Although the survey date occurred before the flowering periods of eel-grass pondweed, rose-mallow, and marsh skullcap, these could have been identified to species by vegetative structures. Furthermore, no *Potamogeton*, *Hibiscus*, or *Scutellaria* species of any type were observed within the project area. Impacts to these species are not anticipated as a result of project implementation.

Fish

Van Sickle Island is located within designated critical habitat for Sacramento winter-run Chinook salmon (Federally listed Endangered) and Delta smelt (Federally listed Threatened). Additional special status fish species with the potential to occur in waterways adjacent to Van Sickle Island include Central Valley spring-run Chinook salmon (Federally listed Threatened) and fall-run Chinook salmon (Federal candidate species for listing), Sacramento splittail (Federally listed Threatened), and Sacramento perch (Federal species of concern). There is one occurrence of Sacramento perch in a neighboring quadrangle (Vine Hill) (CNDDB 2003) more than 5 miles from the project area. No impacts to the waterside of Van Sickle Island will occur as a result of project activities, therefore, no impacts to fish in waterways adjacent to the island are anticipated as a result of project activities. Impacts to the waterside of the levee due to wave action from barge transport are expected to be minimal and short-term and are not expected to impact fish species.

Wildlife

The salt-marsh harvest mouse (Federal and State Endangered, State Fully Protected) was observed in 1995 on the west side of Van Sickle Island in a dredge spoils site that had been revegetated (CNDDDB 2003). The area was visited on 11 June 2003 and appeared to have more topographic relief and larger areas of standing water compared to the Site 2 project area. However, dense stands of pickleweed-dominated brackish marsh vegetation, the preferred habitat of the salt-marsh harvest mouse, dominates the Site 2 project area and rodent runways were observed in the pickleweed during the reconnaissance survey. Therefore the species is assumed to be present within the project site. Appropriate mitigation and minimization measures will be negotiated pending the USACE 404 permit and ESA Section 7 Consultation, and may include those described in Section 2.3.2.1 (Impacts/Mitigation on Van Sickle Island – TES Plants).

The following are additional special status species with the potential to occur in the project area:

- California clapper rail (Federal and State Endangered)
- California black rail (FSC, State Threatened)
- Suisun shrew (FSC)
- Saltmarsh common yellowthroat (FSC)
- Suisun song sparrow (FSC)

The California clapper rail has potential habitat occurring in the project area. There are two known occurrences on the project quadrangles, one on the mainland northeast of the city of Pittsburg and the other on Ryer Island, approximately 3 miles and 6 miles from the Van Sickle project area respectively. Although pickleweed-dominated brackish marsh exists in the project area, Van Sickle Island is a managed wetland and is not a typical breeding location for the rail (see Map 10 in USACE Regional General Permit No. 3, 1998). No California clapper rails were observed during the reconnaissance survey, however, protocol-level clapper rail surveys will be completed prior to construction on Van Sickle Island. These surveys will also look for California black rails. Surveys will be conducted in 2004, prior to project construction and during the appropriate season for rails. If California clapper rails or black rails are observed on the site, construction will occur outside the breeding season of the rail, and wetland habitat mitigation and mitigation and minimization measures implemented for salt marsh harvest mouse will be sufficient to protect and/or enhance habitat for these species.

Abundant pickleweed and coastal brackish marsh habitats are typical habitat associations of saltmarsh common yellowthroat and Suisun shrew. Although sightings of these species have been documented in the vicinity of Van Sickle Island (CNDDDB 2003), none have been on the island itself. None of the species were observed during the reconnaissance survey. Potential suitable habitat for Suisun song sparrow also occurs within the project area and song sparrows were observed during a reconnaissance survey (not identified to subspecies) (Appendix B). Construction would occur outside the breeding season for the rail, yellowthroat, and song sparrow, and wetland habitat mitigation and avoidance and minimization measures implemented for salt marsh harvest mouse will be sufficient to protect and/or enhance habitat for these three species. No long-term impacts to these species are anticipated as part of project implementation.

In addition to the species listed above, the following special-status species have potential suitable basking or foraging habitat occurring in the Van Sickle project area.

- Giant garter snake (Federal and State Threatened)
- Northwestern pond turtle (FSC, SC)
- Swainson's hawk (FSC, State Threatened)

- White-tailed kite (FSC)
- Great blue heron (nesting colonies are sensitive)

The giant garter snake is unlikely to occur within the project area on Van Sickle Island because of the lack of suitable habitat. There is only one documented occurrence in the project quadrangles, on Sherman Island (CNDDDB 2003). This occurrence is more than 5 miles from the project area. The majority of the project area is brackish marsh, dominated by *Salicornia* spp., with some areas of *Scirpus acutus*. There is very little upland habitat, and the levee slopes are compact and therefore difficult for rodents to burrow into. No burrows were observed on the levee slopes that the snakes could use for winter hibernacula. A western aquatic garter snake (*Thamnophis couchi*) was observed dead on the levee road along Montezuma Slough, outside of Site 2. No impacts to the giant garter snake are anticipated as a result of this project.

Marsh habitats near permanent sources of water are typical habitat associations of the Northwestern pond turtle. Although sightings of this species have been documented in the project vicinity (CNDDDB 2003), none were observed on Van Sickle Island. The species was not observed during the reconnaissance survey, and suitable habitat (e.g., for basking) is more likely to be found on the waterside of the levee, which will not be impacted by the project. No short-term or long-term impacts to this species are anticipated as part of project implementation.

Suitable nesting habitat for white-tailed kites or Swainson's hawks does not occur in the project area. Additionally, no Swainson's hawks have been observed in the project quadrangles (CNDDDB 2003). One white-tailed kite nest site has been recorded on the mainland (CNDDDB 2003), within approximately 2 miles of the city of Antioch, and the species was observed foraging on the north side of the island during the reconnaissance survey (Appendix B). Short-term impacts to foraging habitat during construction may be experienced, but these would be temporary and small-scale compared to the available foraging habitat island-wide.

Individual great blue herons were observed during a reconnaissance survey, but no suitable nesting habitat was observed within the vicinity of the Phase II project area. There are no known nesting colonies within the project area or immediate vicinity, so the proposed project is anticipated to have no impact on nesting during project implementation, and no long-term impacts are anticipated. Short-term impacts to foraging habitat during construction may be experienced, but these would be temporary and minor compared to the available foraging habitat island-wide.

Wetlands

The project will require fill of jurisdictional wetlands, primarily brackish marsh (*Salicornia* spp. dominant). A reconnaissance survey indicated that appropriate hydrology (standing water or saturated soils) and vegetation (including wetland indicator species from the following genera *Salicornia*, *Distichlis*, *Atriplex*, *Juncus*, and *Scirpus*; see Appendix B) begins immediately at the landward side levee toe, and extends further landward. A patchy upland area (approx. 0.55 acres) exists between Station 76+00 and 80+00. Project impacts are estimated to extend 60 ft landward of the levee toe (40 ft will be permanently impacted by the new levee footprint, and an additional 20 ft will be temporarily disturbed during construction). This is estimated to be 6.20 acres of wetland impact (4.13 acres permanently impacted, and 2.07 temporarily impacted during construction) for Site 2. The total acreage estimated for all four sites is approximately 52 acres, 34 of which is permanent (within the new 40 ft levee footprint) and 18 of which will be due to temporary construction impacts. Exact acreage of wetland impact will be determined and mitigated under an Individual USACE 404 permit. Potential on-site mitigation sites have been identified by the project proponent and are shown in Figure 5c. Mitigation for loss of jurisdictional wetlands will be coupled with mitigation for loss of salt marsh harvest mouse habitat, discussed above in Section 2.3.2.2.

Terrestrial Natural Communities

The CNDDDB indicates that coastal brackish marsh exists on the waterside of the project area. This area will not be impacted by project activities.

2.4.5 Cultural Resources

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: | | | | |
| a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Disturb any human remains, including those interred outside of formal cemeteries? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

A cultural resources/archaeology study was conducted for Decker Island in 1996 based on site visits, review of base maps, site records, and report files from the Historical Resources Information Systems, maintained by the State of California, Office of Historic Preservation (DWR 1997). The results of the record search for Decker Island were negative, and no cultural resources of any kind were found during the field survey (DWR 1997).

A cultural resources survey was conducted on Bradford Island on June 11, 2003, on Jersey Island on June 17, 2003. Van Sickle Island will be surveyed in early July. No areas of cultural or archaeological concern were found within the project area during the survey on Bradford Island (D. Showers, pers. comm., 2003) or Jersey Island. A report will be finalized by DWR by the end of July.

2.4.6 Geology and Soils

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
| Would the project: | | | | |
| a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: | | | | |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| ii) Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| iii) Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| iv) Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

Although the short-term risk of soil erosion may increase during excavation and levee strengthening, two of the ultimate goals of the project are to strengthen existing Delta levees and to minimize turbidity impacts to Delta waters. To minimize the risk of soil erosion as a result of project activities, the proposed project includes use of erosion control best management practices (described in Section 1.4.1.1) to excavated areas on Decker Island, and grading of strengthened levees on Bradford, Jersey, and Van Sickle Islands.

2.4.7 Hazards and Hazardous Materials

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project: | | | | |
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

Diesel generators on Decker Island will supply power for the conveyor and other electrical systems. Diesel fuel and any other hazardous materials will be handled and stored according to the manufacturer's specifications. A containment area will be established for the diesel fuel storage tanks in an easily accessible location and the ground will be protected from potential contamination within the containment area. In the event of a spill, crews will stop the spillage at its source, contain the spilled material, and notify project supervisors and appropriate agency representatives. Herbicides were used by CDFG during Phase I to control the spread of non-native, invasive plant species on Decker Island, specifically pepperweed (*Lepidium spp.*), yellow star thistle (*Centaurea solstitialis*), and giant cane (*Arundo donax*). CDFG will only be controlling for non-native plants through 2003 on Phase I. Herbicide applications during Phase II are likely to be necessary, and will be applied by licensed individuals.

2.4.8 Hydrology and Water Quality

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project: | | | | |
| a) Violate any water quality standards or waste discharge requirements? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Otherwise substantially degrade water quality? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: | | | | |
| g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| j) Inundation by seiche, tsunami, or mudflow? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

The existing drainage pattern of the project area on Decker Island will be altered as a result of the project through the excavation and grading of channels to connect Decker Island Phase II sloughs with Phase I sloughs leading to Horseshoe Bend. These channels are designed to create tidal wetland habitat and are not anticipated to result in negative hydrological impacts.

Excavation on Decker Island may result in some short-term water quality degradation through increased turbidity, although the impact is expected to be less than significant with mitigation measures incorporated. The project includes the application of erosion control measures on excavated areas of Decker Island to minimize short-term increases in turbidity by soil erosion. Colonization of excavated areas by vegetation will minimize long-term soil erosion. Project revegetation is designed to expedite vegetation colonization of disturbed areas.

The RQWRCB may require turbidity monitoring on Decker Island as part of the Water Quality Certification. The monitoring will most likely be required during periods the contractor is working “in-water.” Monitoring would occur at specified distances on Horseshoe Bend, upstream and downstream of the Decker Island levee breach.

2.4.9 Land Use and Planning

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: | | | | |
| a) Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: | | | | |
| b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

The land use designation for Decker Island is Extensive Agriculture (Solano County 1997). The land use designation for Van Sickle Island is Marsh (Solano County 1997). The land use designation for Jersey and Bradford Islands is Delta Recreation (Contra Costa County 1996). The proposed project does not conflict with land use or planning in the project areas.

2.4.10 Mineral Resources

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: | | | | |
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

There are no mineral resources associated with the project area (Solano County 1997, Contra Costa County 1996).

2.4.11 Noise

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project result in: | | | | |
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project result in: | | | | |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

The project area is located in a low population density and development area and is not likely to have long-term noise impacts. Although noise levels may become elevated during the construction period, impacts are expected to be limited and short-term.

2.4.12 Population and Housing

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: | | | | |
| a) Induce substantial growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

The project areas are located in low population density and development area and implementation is not likely to affect population and housing infrastructure in the area. Work conducted on Bradford Island where there are private homes will be accomplished with their permission. The Bradford Island Reclamation District has sent a letter to the impacted landowners informing them that levee work is planned. The Reclamation District plans to work around any existing houses; no houses are being displaced or moved.

2.4.13 Public Services

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Fire protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Police protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Schools? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Parks? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Other public facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

Because the project area is located in privately-owned and low population density areas, no impacts to public services are expected with project implementation.

2.4.14 Transportation and Traffic

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: | | | | |
| a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Result in inadequate parking capacity? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

The project improves on existing roads along levees, making them more stable and thus improving transportation on project islands. No increase in traffic is expected as part of project implementation.

2.4.15 Recreation

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: | | | | |
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

The project does not include plans for providing recreational opportunities. The protection of wildlife habitat and the increase in in-channel and slough habitats on Decker Island, however, will increase potential hunting and fishing opportunities within the Delta.

2.4.16 Utilities and Service Systems

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: | | | | |
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|------------------------------|-------------------------------------|
| Would the project: | | | | |
| e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Comply with federal, State, and local statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

The project will not result in an increase in wastewater or require wastewater treatment.

2.4.17 Mandatory Findings of Significance

| Issues | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|------------------------------|-------------------------------------|
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

Although wetlands and wildlife habitat will be affected by project implementation, effects will be short-term, and less than significant with mitigation incorporated. These mitigation measures are summarized in Section 2.3. In addition, habitat creation on Decker Island will ultimately enhance open water, wetland, and riparian habitat available for many species of plants, fish, and wildlife.

2.5 Determination

On the basis of this initial evaluation:

| | |
|--|-------------------------------------|
| I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. | <input type="checkbox"/> |
| I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared. | <input checked="" type="checkbox"/> |
| I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. | <input type="checkbox"/> |
| I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed. | <input type="checkbox"/> |
| I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required. | <input type="checkbox"/> |

PENDING PUBLIC REVIEW

| | |
|-----------------------|---------------|
| _____ Signature | _____ Date |
| _____ Printed Name | _____ For |

3 LIST OF PREPARERS

The table below lists the preparers of this Initial Study/Negative Declaration and participants in the related planning, data gathering, and analytical tasks.

| Name | Title | Affiliation | Project Role |
|-----------------|---------------------------|---------------------|---|
| Dave Showers | Staff Biologist | DWR | Project description, Phase I and II adaptive management, cultural resources |
| Kent Nelson | Environmental Specialist | DWR | Project description, regulatory compliance |
| Don Trieu | Engineer | MBK Engineers | Engineering, grading, re-vegetation planning for Decker, Bradford, and Jersey islands |
| Mark Fortner | Engineer | MBK Engineers | Engineering, grading, mitigation planning for Van Sickle Island |
| Scott Fonte | Engineer | MBK Engineers | Engineering, grading, re-vegetation planning |
| Sapna Khandwala | Biologist/Project Manager | Stillwater Sciences | Environmental analysis, document preparation, project management |
| Maya Hayden | Biologist | Stillwater Sciences | Biological reconnaissance surveys, environmental analysis and document preparation |
| Bruce Orr | Senior Ecologist | Stillwater Sciences | Biological reconnaissance surveys, wetland regulatory compliance |
| Scott Wilcox | Senior Scientist | Stillwater Sciences | Environmental analysis, document preparation |
| Tami Cosio | Environmental Scientist | Stillwater Sciences | Environmental analysis, document preparation |
| Zooley Diggory | Environmental Scientist | Stillwater Sciences | Environmental analysis, document preparation |

4 CONSULTATION AND COORDINATION

4.1 Agency Personnel Consulted

The following agency personnel were consulted during the drafting of this document to: review and discuss agency reference documents; specify particular species of concern for the project area; discuss and identify potential impacts of the proposed project on TES species; and develop appropriate mitigation actions for inclusion in the project to minimize potential negative impacts to TES species.

Mark Philipp, Department of Fish and Game
 Bob Orcutt, Department of Fish and Game
 Todd Gardner, Department of Fish and Game
 Ryan Olah, U.S. Fish and Wildlife Service

In addition, the following agency personnel participated in a site visit, which included a project presentation on Decker Island:

| | |
|-----------------|----------------------|
| Dave Zezulek | CDFG |
| Mark Philipp | CDFG Levee Program |
| Bob Orcutt | CDFG Levee Program |
| Maria Brand | CDFG, Bay Delta |
| Mary Small | Coastal Conservancy |
| Kent Nelson | DWR |
| Jim Eichman | DWR |
| Kathy Kelly | DWR |
| Curt Schmutte | DWR |
| Dave Showers | DWR |
| Steve Culberson | DWR |
| Bob Yeadon | DWR Special Projects |
| Bruce Herbold | EPA |
| Carolyn Yale | EPA |
| Ryan Olah | USFWS |
| Mike Nepstad | USFWS |

4.2 Public Involvement

The Initial Study/Mitigated Negative Declaration (IS/MND) will be circulated to state and local agencies, and made available to the public for a 30-day review period. The document will also be sent to the USFWS and NOAA Fisheries as a courtesy, as these agencies will be involved in ESA Section 7 Consultation during the Clean Water Act Section 404 permitting process. The public and agencies will be notified as follows:

- A Notice of Availability (NOA) of the proposed IS/MND will be filed with the Solano and Contra Costa County Clerks. The County Clerks will post the NOA within 24 hours of receipt for a period of at least 20 days.

- A public notice of the availability of the proposed IS/MND for public review will be posted for publication at least one time in a local newspaper of general circulation in the areas affected by the Project.
- 15 copies of the proposed IS/MND with an attached Notice of Completion will be sent to the State Clearinghouse for distribution, including 4 copies to be sent to CDFG Region 2, and 1 copy to be sent to CDFG Region 3.
- Copies of the proposed IS/MND and NOA will also be made available for public review on DWR's Delta Levees website and at the local public libraries of Rio Vista, Suisun City, and Oakley.
- Copies of the proposed IS/MND and NOA will be distributed by DWR to interested parties.

5 COMPLIANCE WITH FEDERAL LAWS AND REGULATIONS

5.1 Federal

Clean Air Act of 1972, as amended, 42 U.S.C 7401, et seq. Section 176(c) of this act prohibits Federal action or support of activities that do not conform to a State Implementation Plan. The proposed Project is not expected to violate any standard, increase violations in the Project area, exceed the Environmental Protection Agency's general conformity *de minimis* threshold, or hinder the attainment of air quality objectives in the local air basin. The proposed Project will have no adverse effect on the future air quality of the Project area and is in compliance with this act.

Clean Water Act of 1972, as amended, 33 U.S.C 1251, et seq. Section 404 permits for fill of waters of the United States or associated wetlands will be obtained prior to project implementation on Van Sickle Island, and coverage under Nationwide General Permit #3 will apply for work on Bradford Island, as described in the main body of this document. In compliance with Section 401, a waiver of water quality certification will be obtained from the RWQCB for work on Decker Island.

Endangered Species Act of 1973, as amended, 16 U.S.C. 1531, et seq. DWR has initiated informal consultation with USFWS and NOAA Fisheries to determine whether Federally listed, proposed, candidate species or their critical habitat are likely to be adversely affected by this project, and to develop appropriate mitigation measures to ensure compliance with the Endangered Species Act. In accordance with section 7(c), the USACE will need to formally consult with USFWS and NOAA Fisheries prior to issuing an Individual 404 permit for work on Van Sickle Island. Furthermore, habitat creation on Decker Island should contribute to the recovery of species listed under the Endangered Species Act.

National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470. In accordance with 36 CFR 800, the implementing regulations for Section 106 of the act, Federal agencies are required to consider the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. Procedures in 36 CFR 800 define how Federal agencies are to meet the statutory responsibilities of Section 106 of the Act. DWR has or will perform cultural resources surveys on all four islands.

5.2 State

Surface Mining and Reclamation Act. In compliance with the Act, excavation of the new channels on Decker Island will require a SMARA permit from the Office of Mines and Reclamation.

California Environmental Quality Act. This Mitigated Negative Declaration is in compliance with this Act.

State Water Resources Control Board (SWRCB), Division of Water Quality, and the California Regional Water Quality Control Board (RWQCB), Central Valley Region.

The SWRCB and the RWQCB review activities that affect water quality in the Central Valley Region. The Boards administer the requirements mandated by State and Federal law (Clean Water Act). The RWQCB establishes water quality standards and reviews individual projects for compliance with the standards. DWR received a waiver of water quality certification from the RWQCB for Phase I of this project, and will amend or obtain a new waiver for Phase II of the project.

California Department of Fish and Game (CDFG). Generally, the CDFG administers the State laws providing protection of fish and wildlife resources, including the California Endangered Species Act of 1984. This act requires the non-Federal lead agencies to prepare biological assessments if a project may adversely affect one or more State listed endangered species. Informal consultation with CDFG regarding state listed or sensitive species has been initiated by DWR. Assessment of and mitigation for loss of AB360 habitat types has also been negotiated with CDFG.

6 REFERENCES

Champ, A. 1995. Memorandum for Regulatory BR Personnel regarding Delta Levee Maintenance. Chief, Regulatory Branch, US Army Corps of Engineers.

CDFG (California Department of Fish and Game). 2002. Van Sickle Island (Reclamation District No. 1607) Levee Habitat Assessment. Final Draft. Prepared by CDFG, Sacramento Valley and Central Sierra Region, Delta Levee Habitat Improvement Program, and Department of Water Resources, Central District Flood Protection and Geographic Information Branch. September 1, 2002.

Contra Costa County. 1996. Contra Costa County General Plan, 1995-2010. Contra Costa County Community Development Department. Martinez, CA.

DWR (Department of Water Resources). 1997. A cultural resources survey for the Decker Island Mitigation Project, Sacramento and Solano Counties, California. DWR Environmental Services Office, Sacramento, CA.

DWR (Department of Water Resources). 1998. Decker Island Habitat Development Initial Study (Phase I). Central District and Flood Protection and Geographic Information Branch, Sacramento, California.

Hart, J. 2002. Monitoring results, Decker Island Restoration Project. Spring monitoring survey results, prepared by HART, Inc. Prepared for the Department of Water Resources, July 9, 2002.

Herzog, S.K. 1996. Wintering Swainson's hawks in California's Sacramento-San Joaquin River Delta. *The Condor* 98: 876-879.

LTMS (Long-term Management Strategy) Management Plan. 2001. Prepared by the US Army Corps of Engineers, US Environmental Protection Agency, San Francisco Bay Conservation and Development Commission, San Francisco Bay Regional Water Quality Control Board, State Water Resources Control Board. Long Term Management Strategy (LTMS) for the placement of dredged material in the San Francisco Bay region. Available online at <http://www.spn.usace.army.mil/ltms2001/> (Accessed July 10, 2003).

Solano County. 1997. Land use and circulation element (amended). Solano County Planning Department. Fairfield, CA.

FIGURES

APPENDIX A

Bradford, Jersey, and Van Sickle Island AB360 Habitat Assessments (Includes maps and levee logs)

CDFG (California Department of Fish and Game). 2002. Van Sickle Island (Reclamation District No. 1607) Levee Habitat Assessment. Final Draft. Prepared by CDFG, Sacramento Valley and Central Sierra Region, Delta Levee Habitat Improvement Program, and Department of Water Resources, Central District Flood Protection and Geographic Information Branch. September 1, 2002.

CDFG (California Department of Fish and Game). 2002. Bradford Island (Reclamation District No. 2059) Levee Habitat Assessment. Final Draft. Prepared by CDFG, Sacramento Valley and Central Sierra Region, Delta Levee Habitat Improvement Program, and Department of Water Resources, Central District Flood Protection and Geographic Information Branch. September 1, 2002.

Jersey Island Levee Log only – no habitat impacts were determined by CDFG, therefore a report was not prepared.

APPENDIX B

Species observed during site visits:

Decker Island
Bradford Island
Jersey Island
Van Sickle Island

APPENDIX C

Decker Island preliminary design plans (pp. 1-5)
Typical levee cross-sections for Bradford (p. 6), Jersey (p. 7), and
Van Sickle (p. 8) islands

APPENDIX D

Special-status species list for Bradford and Jersey Islands (CNDDDB results)

APPENDIX E

Special-status species list for Van Sickle Island (CNDDDB results)

APPENDIX F

Photo Logs

- F-1: Bradford Island
- F-2: Jersey Island
- F-3: Van Sickle Island
- F-4: Decker Island